

New species of *Livistona* R. Br. (Arecaceae) from north Queensland and Papua New Guinea

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Summary

Dowe, J. L. & Barfod, A. S. (2001). New species of *Livistona* R. Br. (Arecaceae) from north Queensland and New Guinea. *Austrobaileya* 6 (1): 165–174. *Livistona concinna*, *L. surru* and *L. tothur* are described as new. *Livistona concinna* is endemic in north Queensland, and *L. surru* and *L. tothur* are endemic in Papua New Guinea. Each species is illustrated.

Keywords: Arecaceae; *Livistona* – Queensland, New Guinea; *Livistona concinna*; *Livistona surru*; *Livistona tothur*.

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Introduction

Livistona R.Br., with about 33 species, has an unusually widespread distribution for a palm genus, occurring from the Horn of Africa and Yemen, through east Asia to Japan and the Bonin Islands, throughout south-east Asia and Malesia to as far east as the Solomon Islands, and in the north, east and centre of Australia. Australia has about 18 species. New Guinea has about seven species, two of which also occur in northern Australia across Torres Strait, and others which are endemics that are most closely related to species in the Philippines, eastern Indonesia and the Solomon Islands.

The genus *Livistona* in Australia was treated by Rodd (1998) as having 16 species and three subspecies. Dowe and Jones (in press, Flora of Australia) have recognised 18 species following minor adjustment to Rodd's taxonomy. The genus in New Guinea has had no recent treatment, although it has received attention in the past from Beccari (1877, 1921) and Burret (1935, 1939, 1941) who both described new taxa within it. Rodd (1998) recently combined one of Beccari's and three of Burret's taxa with those species that are shared with Australia.

In Australia, many species of *Livistona* are ubiquitous in some areas, forming large colonies that dominate their local environment. Only a few species are considered rare. In New Guinea, the distribution ranges are fragmented and locally most species are rare occurring in scattered groups on isolated ridges and mountain slopes.

The new taxon from north Queensland described here has had some previous recognition as a distinct species. Jones (1984) listed it as "*Livistona* sp. Cooktown", and suggested that it was "similar in many respects to *Livistona benthamii* F.M. Bailey, but the leaves are light green on both surfaces and the lamina has a broad central area where the segments are fused". This 'tag' name was accepted by Irvine (1984) who placed the taxon in a group that included *L. drudei* F.Muell. ex Drude as well as *L. benthamii*, while Tucker's (1988) informal account provided convincing evidence for the taxon's distinctiveness.

The two new taxa from New Guinea described here were discovered during field-work conducted within the framework of the Palms of New Guinea (PONG) project that is currently being coordinated by the Royal Botanic Gardens, Kew, England. This project covers the island of New Guinea, and its aim is to publish an account of the palm flora of this

island in the near future. Both of the above new taxa appear to be confined to Papua New Guinea despite extensive field-work having been carried out in Papua (formerly Irian Jaya) as part of the PONG project. An indication of the lack of recognition of any diversity within *Livistona* in New Guinea was provided by Essig (1977) who quoted unpublished notes by Moore stating: "...the species of *Livistona* in New Guinea are difficult to separate from related species in Australia and the Solomon Islands. Possibly there are no true endemics of *Livistona* in New Guinea.". However, Essig and Young (1981) described from the West Sepik Province "specimens of a large *Livistona* bearing red fruit that we had seen from the helicopter, but found only a few sterile individuals", and Hay (1984) mentioned an uncollected taxon in Madang Province: "...isolated stand near the mouth of the Ramu River has apparently not been collected. Here the *Livistonas* are growing in a remarkable rain forest dominated almost to the exclusion of dicotyledonous trees by palms...". These populations are indeed of the new taxa described in this account, and illustrate both the cryptic nature of *Livistona* in New Guinea and the need for thorough field-work.

Materials and methods

Field-work was undertaken by the authors in Queensland and Papua New Guinea, between 1996 and 2000. Specimens were examined at AAU, BO, BRI, LAE, K, QRS and SING, and specimens lodged at AAU, BRI, LAE and K.

Taxonomy

***Livistona concinna* Dowe & Barfod sp. nov.**, quod in inflorescentias individuorum non fructiferorum ad *L. drudei* F.Muell. ex Drude accedit sed ab ea differt essentialiter inflorescentii fructiferis validioribus et ramosis ad ordinem altiore. Arbor usque ad 30 m alta, velut dioecia fungens. Lamina foliorum profunde segmentata, segmentis apice cernuo. Inflorescentiae non ramosae intra prophyllum. Inflorescentiae partiales 8 vel 9, individuis non fructiferis 120–180 cm longis, ramosis ad ordinem quartum,

individuis fructiferis 160–250 cm longis, ramosis ad ordinem quintum, bractae in rhachidibus et rachillis glabrae. Flores hermaphroditi solitarii vel 2–4 fasciculati. Pedicellus fructus ad 2 mm longus, fructus globosus, 9–12 mm diametro, epicarpium anthracinum, punctis lenticularibus dispersis, mesocarpium circa 1 mm crassum, oleosum. **Typus:** Queensland. COOK DISTRICT: 16 km north of Cooktown, just north of the Cooktown Airport, Barrett Creek, 15°25'S, 145°11'E, 5 m alt., 17 Oct 2000, J. L. Dowe 607 (holo: BRI; iso: AAU, K, QRS).

Solitary, functionally dioecious palm. Trunk to 30 m tall, with diameter at breast height 24–35 cm, expanded at the base to 100 cm diam., grey; nodes raised; internodes 2–12 cm wide; petiole bases not persistent. Leaves 50–65 in a globose to hemispherical crown; petioles 120–300 cm long, glabrous, green throughout, proximally 5–11 cm wide, 2.2–3.5 cm wide in mid area and distally c. 2.8 cm wide, triangular in cross-section, adaxially moderately longitudinally ridged, abaxially rounded, margins with solitary symmetric black spines 3–5 mm long congested in the proximal portion with distal margins unarmed, sharp, slightly winged; leaf-base fibres not prominent, coarse, persistent; hastula raised, sharp, papery on the margins; lamina strongly costapalmate, glabrous, adaxially mid-green, abaxially slightly lighter green, glossy on both surfaces, non-waxy, sub-circular in profile, 155–165 cm long, about 200 cm wide, folded; segments 60–78, apices deeply forked, distal portion pendulous; segment free for about 60% of their length, and with apical split about 41% of the length of their free portion; mid-lamina segments 2.6–4 cm wide at the disjunction, with apices acuminate, filamentous; longitudinal veins 9 or 10 each side of midrib, parallel, more prominent than the transverse veins which are thin and extend across 2–4 parallel veins; density of transverse veins about 12 per unit area of 15 × 10 mm. Inflorescence an unbranched axis with several partial inflorescences decreasing in size toward the apex, sexually dimorphic; non fruit bearing (functionally male) inflorescences 120–180 cm long with partial inflorescences 8 or 9; most

proximal partial inflorescences branched to the 4th order, or to the 3rd order in the distal partial inflorescence; partial inflorescences slightly curved; peduncle dorsio-ventrally compressed, c. 25 mm wide and 10 mm thick, glabrous; fruit bearing (functionally female) inflorescences 160–250 cm long with partial inflorescences 8 or 9; most proximal partial inflorescences branched to the 5th order, to the 3rd order in the distal partial inflorescence; partial inflorescences slightly curved, held horizontal to semi-pendulous; peduncle dorsio-ventrally compressed, c. 30 mm wide and 10 mm thick; peduncle lacking empty bracts; prophyll 27–35 cm long, ancipitous, glabrous; bracts on the rachis 30–50 cm long, tubular, tightly sheathing, not disintegrating or splitting with age, glabrous, apically acute with margins entire and lateral splits uneven with one about twice as deep as the other; rachillae 5–20 cm long, glabrous. Flowers solitary or in clusters of 2–4, 1.6–2 mm high and about 2 mm wide, white to cream; sepals basally fused, cupular, 3-lobed with lobes triangular and margins hyaline, to about 1.5 mm high and with apices acute; petals triangular, slightly asymmetric, 2–2.2 mm long, 1.8–2 mm wide at the base, acute at the apex; stamens about 1 mm high; filament subulate; connective very thin; anthers dorsifixed, ovoid, c. 0.2 mm long, didymous; carpels wedged-shaped, rounded; styles fused, c. 1 mm high; stigma erect, trilobed; fruiting pedicel to 2 mm long. Fruit globose, 9–12 mm diam., shiny black; stigmatic remains subapical; epicarp smooth but with scattered lenticellular dots, drying slightly rugose with integumental scar extending from the stigmatic remains for about $\frac{3}{4}$ the length of the fruit toward the base; mesocarp c. 1 mm thick, moist, oily and gritty in texture; endocarp thin, crustaceous, light brown, 0.1–0.2 mm thick. Seed globose to subglobose; seedcoat intrusion extending to half or less of the width of the seed, contorted, light brown, crystalline and spongy in texture; embryo lateral to sublateral, c. 2 mm long. Eophyll 5-ribbed. Fig. 1.

Specimens examined: Queensland. COOK DISTRICT: Lakefield National Park, Kennedy Bend, 14°50'S, 144°15'E, 50 m alt., Oct 1997, *Dowe 415 with Smith* (JCT); Lakefield National Park, Twelve Mile Waterhole, Oct 1999, *Dowe 606 with Barfod* (BRI, JCT, K); Kennedy River, 5.5 km N of New Laura Station, 15°07'S, 144°18'E, 50 m alt., riparian forest, Nov 1981, *Irvine 2204, 2205* (QRS); near Cooktown airport, Barrett Ck, *Gray 2764* (QRS); 3.3 km

NE of Cooktown Airport, Barrett Creek, NW boundary, 15°25'S, 145°12'E, 0 m alt., riparian evergreen mesophyll vine forest bordering mangroves, Nov 1981, *Irvine 2178, 2179, 2180* (QRS); near Cooktown, Barrett Creek, 15°33'S, 145°12'E, 0 m alt., Oct 1999, *Dowe 604 with Barfod* (BRI, JCT, K); Endeavour River, opposite the SW corner of the Cooktown Airport, 15°27'S, 145°11'E, 3 m alt., Nov 1981, *Irvine 2181* (QRS); 3.3 km off main road at north side of Cooktown Airport, Aug 1986, *Hind 4594 with Hill & Healy* (NSW); Cooktown, S side of Endeavour River, near Anzac Park, 15°28'S, 145°15'E, 10 m alt., Feb 1996, *Dowe 252* (BRI, FTG, JCT). Cultivation. Queensland. Townsville, Anderson Park Botanic Gardens, Oct 1998, *Dowe s.n.* (JCT).

Distribution and habitat: Australia. Queensland: Flinders Island, drainage area of the Kennedy River and tributaries, Barrett Creek and along the Endeavour River north of Cooktown and Archer Point south of Cooktown; in seasonally moist open forest, seasonally inundated *Melaleuca* swamp, along creek and river banks, and at mangrove margins in non-saline environments; soils usually alluvial. Occurs with *Corypha utan* Lam. in the Kennedy River area and with *L. muelleri* F. M. Bailey in the vicinity of Cooktown. Most populations are regularly affected by fire.

Phenology: Flowering December to March; fruiting April to October.

Etymology: From Latin *concinus*, neat, well-arranged, in reference to the organised and neat appearance of the petioles in the crown compared to those in other *Livistona* species.

Conservation: Adequately conserved in Lakefield National Park, Endeavour River National Park and on Flinders Island.

Notes: Specimens of this taxon were tentatively placed under *L. drudei* by Rodd (1988). Rodd cited three specimens (*Irvine 2204 & 2205*, and *Hind 4594*) that were collected in the distributional range of *L. concinna*. One consists of a fallen dead leaf and an old infructescence. Although there is some gross resemblance of *L. concinna* to *L. drudei*, differences are otherwise significant, particularly in morphology of the inflorescence and fruit. The inflorescence of non fruit-bearing individuals is similar to that in *L. drudei*, but the fruit-bearing inflorescences are more robust and branched to a further order in *L. concinna* than they are in *L. drudei*. Although *L. concinna* occurs with *L. muelleri* in some locations, we

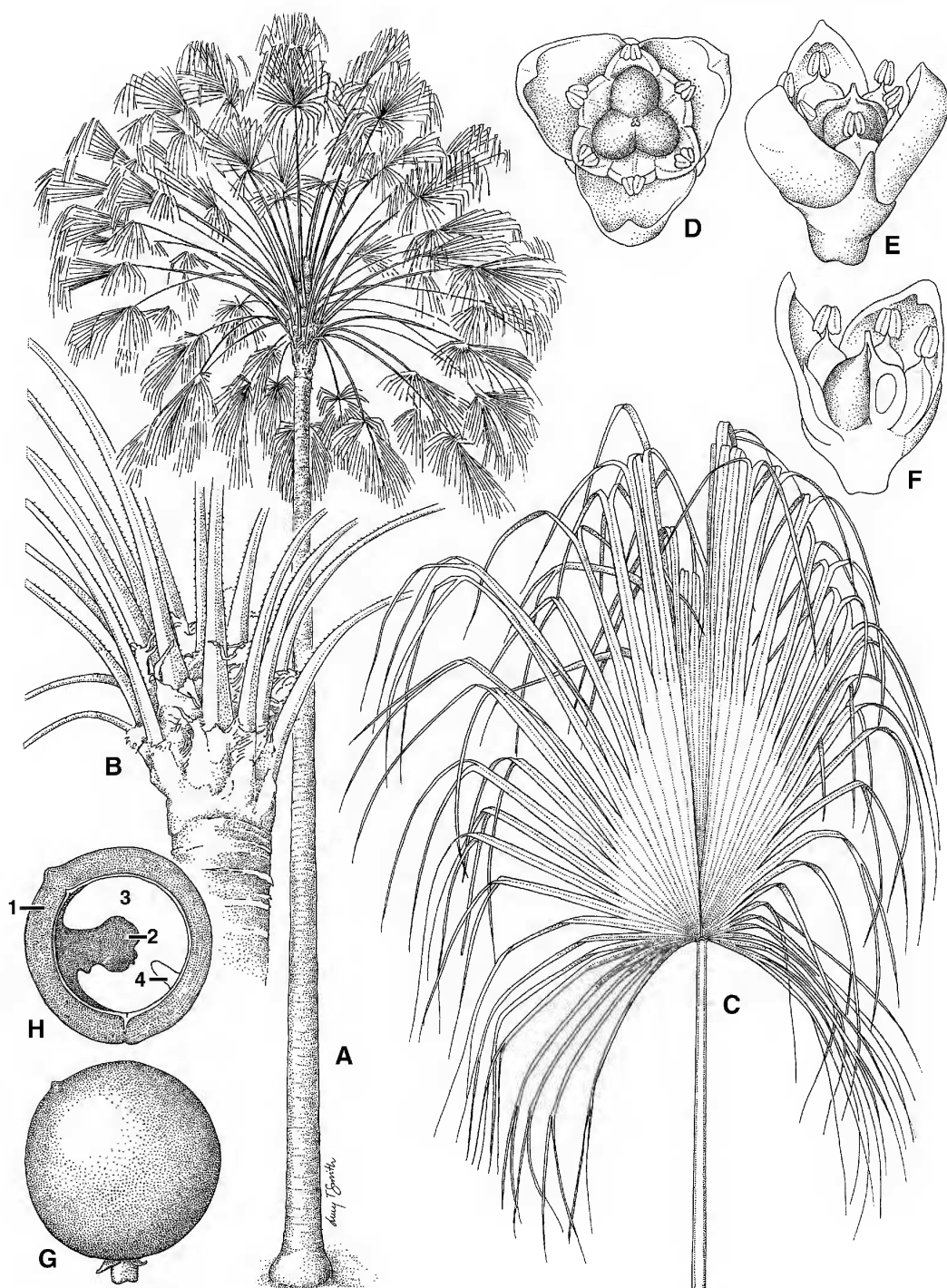


Fig. 1. *Livistona concinna*. A. Habit. B. Leaf-bases and leaf-base fibres of crown $\times 0.05$. C. Leaf in adaxial view $\times 0.06$. D. Flower viewed from above. E. Flower in lateral view. F. Flower in LS view showing orientation of the ovule. D-F $\times 17.5$. G. Fruit in lateral view. H. Fruit in LS view showing mesocarp [1], seedcoat intrusion [2], endosperm [3] and embryo [4]. G-H $\times 2.7$. A-C from Dowe 607 (K); D-F from Dowe s.n., 17 Oct. 1998 (JCT); G-H from Dowe 252 (JCT). Del. Lucy T. Smith.

have not detected, at least by visual means, any putative hybrids between the two.

***Livistona surru* Dowe & Barfod sp. nov.** Species haec ab *L. tothur* Dowe & Barfod differt colori laminae foliorum quasi aequali utrinque, apice segmentorum foliorum cernuo, bracteis in pedunculis absentibus, bracteis in rhachidibus fibrosis et dense pubescentibus, paginis axium inflorescentiarum dense pubescentibus, fructibus rubellis aurantiacis ad 65 mm diametro, granis sclerotis longistrorsum parallelis in epicarpio inclusis. Arbor usque ad 20 m alta, velut dioecia fungens. Segmenta laminae foliorum apice cernuo. Inflorescentiae prophylo ramosae axibus 3 collateralibus subaequalibus, unumquemque inflorescentiis partialibus 5–7, individuis fructiferis ad ordinem secundum divisas, bractee in rhachidibus et rhachillis dense pubescentes. Flores 2–4 fasciculati. Pedicellus fructus 6–12 mm longus, fructus globosus versus obovoideus, 55–65 mm diametro, epicarpium rubellum aurantiacum punctis lenticellularibus dispersis, mesocarpium latum et carnosum fibris crassis. **Typus:** Papua New Guinea. WEST SEPIK PROVINCE: Miwaute, 03° 25'S, 142° 07'E, 950–1000 m alt., 20 Nov 1996, A. S. Barfod 390 with M. D. Ferrero & A. Damborg (holo: AAU; iso: K, LAE).

Solitary, functionally dioecious palm. Trunk to 20 m tall, 18–25 cm diameter at breast height, erect, slightly broader at the base, light grey, usually covered by crustaceous lichens; nodes slightly raised, internodes to 5 cm wide, lacking longitudinal fissures, petiole bases not persistent. Leaves 17–29 in a spherical to vertically oblong crown; petiole 140–180 cm long, slightly arching, green, proximally about 19 cm wide and triangular in cross section, adaxially flat, abaxially rounded, glabrous except for scattered lepidote scales that are brown in the centre and grey at the margin, more densely so on the abaxial surface with margins with single or grouped black spines 5–10 mm long, largest and more closely inserted in the proximal portion, becoming smaller and wider spaced in the distal portion; leaf-base fibres in

2 layers, the outer with thick fibres, the inner with thin coir-mat like fibres, reddish brown, persistent until leaf fall then deciduous in sheets; ligule to 1 m long, to 10 mm thick; hastula very prominent, raised c. 2 cm, 5 cm wide, thick edged; lamina sub-circular to ovate, 180–224 cm long, 143–160 cm wide, undulate, adaxially mid green, abaxially similar green, pendulous in the distal portions; segments 70–90, free for 45–80% of their length and apically split about 6% of length of their free portion; mid-lamina segments 4.5–7 cm wide at the disjunction; parallel veins 5 or 6 on each side of midrib, more prominent than transverse veins which are thin and extend across 2–6 parallel veins with a density of about 22 per unit area of 15 × 10 mm. Inflorescences basally branched within the prophyll with 3 subequal axes about 120 cm long; each axis bears 5–7 partial inflorescences which are branched to the 3rd order on non fruit-bearing plants, to the 2nd order on fruit-bearing plants but otherwise similar; prophyll to 37–42 cm long, 12.5–15 cm wide, glabrous, lacerate-fibrous at the apex; peduncle of individual axes subterete, to 3 cm wide, lacking bracts; bracts on rachises 40–45 cm long, loosely tubular, fibrous, disintegrating at the apex with maturity, pubescent throughout but more densely so toward the apex; rachillae subterete to angular, 14–24 cm long, densely covered with long coarse red appressed scales in the proximal portion, with long white scales distally; scales less dense to absent in the extreme distal portions. Flowers in clusters of 2–4; fruiting pedicel 6–12 mm long, c. 3 mm across, green, with prominent scars from fallen flowers. Fruit globose to obovoid, 55–65 mm long, 50–55 mm diam., orange-red, shiny; epicarp with scattered lenticellular dots and c. 3 mm long lines pointed toward the fruit apex; stigmatic remains present apically; longitudinal stripe of suberised epidermal tissue usually visible for full length of fruit; mesocarp fleshy with fibres thick, distributed throughout but more densely aggregated toward the endocarp and shallowly embedded in the surface of the endocarp; endocarp to 2 mm thick, bony. Seed globose to subglobose, 30–40 mm diam.; endosperm intruded by the seedcoat to about two-thirds across; intrusion broadly kidney-shaped, crystalline/spongy, orange; embryo lateral. Fig. 2.

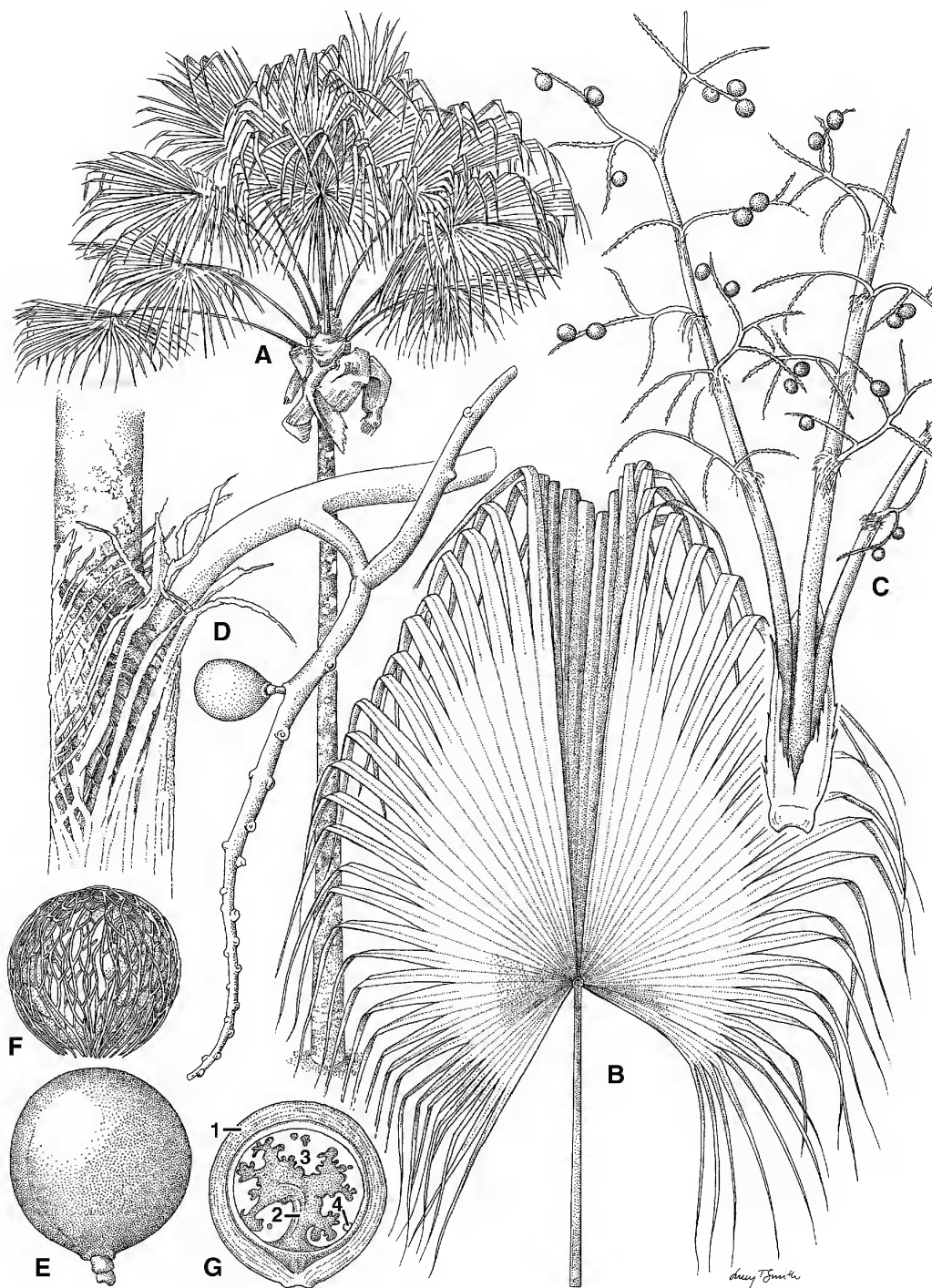


Fig. 2. *Livistona surru*. A. Habit. B. Leaf in adaxial view $\times 0.06$. C. Infructescence $\times 0.09$. D. Basal portion of partial infructescence showing rachis bract apex and immature fruit $\times 0.4$. E. Fruit in lateral view. F. Fruit with epicarp removed exposing mesocarp fibres. G. Fruit in LS view showing mesocarp [1], seedcoat intrusion [2], endosperm [3] and embryo [4]. E-G $\times 0.4$. A, C, D & E from *Barfod* 390 (K); B, F & G from *W.J. Baker* 582 (K). Del. Lucy T. Smith.

Specimens examined: **Papua New Guinea.** WEST SEPIK PROVINCE: Miwaute, 142° 07' E, 03° 25' S, 950–1000 m alt., Nov 1996, *Barfod* 399 with *Ferrero & Damborg* (AAU, K, LAE); Upper Freida River, Mt Ekwai, 1200–1300 m alt., Feb 1998, *Ferrero* 980029 (LAE). MADANG PROVINCE: Bosmun village at mouth of Ramu River, 04° 07' S, 144° 43' E, 10–20 m alt., Nov 1996, *Damborg* 354 with *Ferrero & Barfod* (AAU, LAE, K); Goinbang, near Bosmun 2, mouth of Ramu River between Bogia and Bosmun 2, Jan 1996, *Baker* WJB582 (K).

Distribution and habitat: Papua New Guinea. West Sepik Province, Miwaute area and Mt Ekwai; Madang Province, in the vicinity of the mouth of Ramu River.

Phenology: Flowering November to January; fruiting March to June.

Etymology: From the native Olo language vernacular name *surru*, used in the Miwaute area for this plant.

Ethnobotany: Leaves are used for roof thatching and umbrellas, stem portions for axe handles and house frames, and leaf sheath fibres for brooms and sago strainers.

Notes: *Livistona surru* is distinguished by its leaf lamina with almost equal colour on both surfaces; leaf segment apices pendulous, the absence of bracts on the inflorescence peduncle, the presence of densely pubescent, fibrous bracts subtending the basal branches of the partial inflorescences, the surfaces of the inflorescence axes being densely pubescent, and by its large orange-red fruit to 65 mm diameter with thick mesocarp fibres and prominent longitudinally parallel sclerids embedded in the epicarp.

***Livistona tothur* Dowe & Barfod sp. nov.**

differt a *L. surru* Dowe & Barfod colore argenteo glauco in latere abaxiali laminae foliorum, apice segmentorum foliorum rigido, praesentia bractearum ad basim uniuscujusque axium inflorescentiarum, bracteis in rhachidibus chartaceis et glabris, paginus axium inflorescentiarum glabris vel moderate pubescentibus, fructibus rubellis aurantiacis ad 43 mm diametro. Arbor usque ad 20 m alta, velut dioecia fungens. Pagina adaxialis laminae foliorum aeruginosa, pagina abaxialis argentea glauca, segmenta laminae foliorum rigida ad apicem, inflorescentiae

prophylloramosae axibus 3 collateralibus subaequalibus, unumquemque inflorescentiis partialibus 5 vel 6, in individuis fructiferis ramosis ad ordinem tertiam, bractearum in rhachidibus et rhachillis fere glabrae. Flores solitarii rubrae. Pedicellus fructus 2.5–5 mm longus, fructus globosus, 35–43 mm diametro, epicarpium rubellum aurantiacum, punctis lenticularibus dispersis, mesocarpium latum, fibris tenuibus. **Typus:** Papua New Guinea. WEST SEPIK PROVINCE: Onake Mts, on road to Niau Kono from Vanimo, 2° 45.89' S, 141° 04.06' E, 500 m alt., 26 Nov 1996, *A. Damborg* 418 with *A. S. Barfod* (holo: AAU; iso: K, LAE).

Solitary, functionally dioecious palm. Trunk to 20 m tall, 15–20 cm diameter at breast height, erect, slightly swollen at the base, grey, nodes slightly raised, c. 1 cm wide, dark grey, internodes to 15 cm long; petiole bases not persistent. Leaves 24–40 in an open spherical crown; petiole 150–200 cm long, proximally about 10 cm wide, distally about 15 mm wide, adaxially flat, abaxially rounded, arching, green, glabrous, margins with single, recurved, green spines 1–2 mm long throughout its length, but largest and more closely spaced in the proximal portion; margins lacerate fibrous in extreme proximal portion; leaf-base fibres prominent, in 2 layers of more or less equal coarseness, persistent in sheets, chestnut brown; ligule to 60 cm long; hastula raised to c. 10 mm, semi-circular; lamina sub-circular, 150–200 cm long, 120–150 cm wide, adaxially bluish-green, abaxially silvery glaucous; segments 60–75, rigid with apex becoming pendulous only with age or damage, free for 62–85% of their length and apically split for 1–3% of the length of their free portion, 3–4 cm wide at the disjunction; segments not overlapping in the hastula region; parallel veins 6 or 7 on each side of midrib, more prominent than transverse veins which are very thin and extend across 2–7 parallel veins with a density of c. 33 per unit area of 15 × 10 mm. Inflorescences basally branched with 3 similar collateral axes, each about 200 cm long with 5 or 6 partial inflorescences which in fruit-bearing plants are branched to the 3rd order; prophyll c. 30 cm long and 10.5 cm wide,

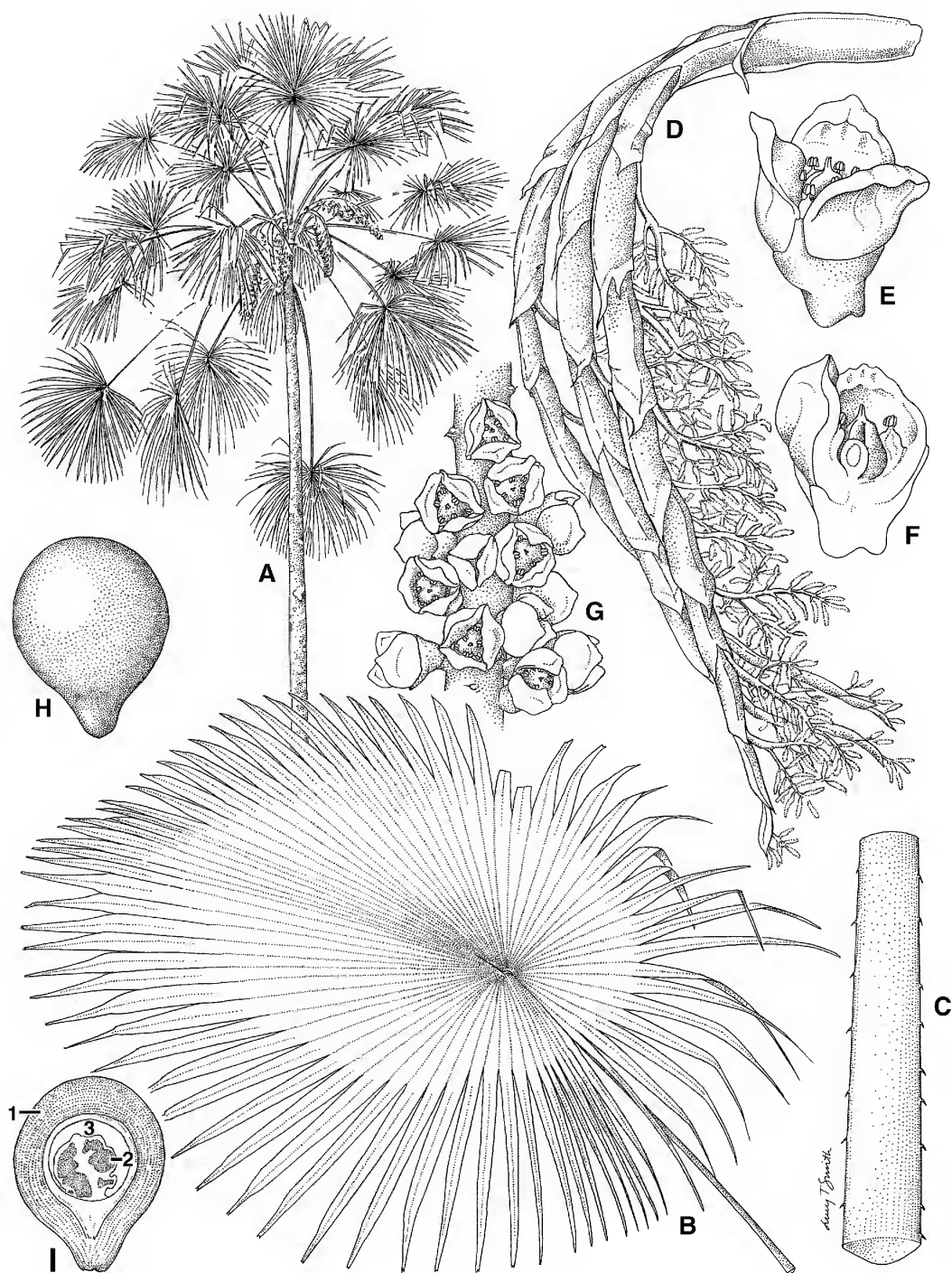


Fig. 3. *Livistona tothur*. A. Habit. B. Leaf in adaxial view $\times 0.05$. C. Mid-section of petiole $\times 0.2$. D. Inflorescence $\times 0.08$. E. Flower in lateral view. F. Flower in LS view showing orientation of the ovule. E–F $\times 20$. G. Flowers attached to rachilla $\times 7$. H. Fruit in lateral view. I. Fruit in LS view showing mesocarp [1], seedcoat intrusion [2], and endosperm [3]. H–I $\times 0.5$. A, D, E, F & G from *Barfod* 510 (K); B from *Dowe* 516 (JCT); C, H & I from *Damborg* 418 (K). Del. Lucy T. Smith.

yellow and coriaceous proximally, brown and chartaceous distally, glabrous apart from a ferrugineous woolly tomentum along the carinae; peduncle with one tubular, papery and loosely sheathing bract, densely scaly at the apex, glabrous; peduncle of individual axes proximally subterete, becoming dorsi-ventrally compressed distally with edges angular, furfuraceous in parts enclosed in bracts, otherwise patchily furfuraceous or glabrous on exposed surfaces; bracts on rachises tubular, papery, loosely sheathing, glabrous apart from some irregular pubescence toward the apex; apices more or less non-fibrous showing only minor disintegration; rachillae rigid, terete, 6–12 mm long, to 3 mm diam., glabrous, red, irregularly disposed. Flowers solitary; sepals fused, red, tri-lobed with lobes to 1.2 mm long; petals broadly triangular, about 2 mm long, basally connate for about half their length, thick, fleshy, red with apical margins recurved, the inner surface bearing the impression of the stamens, the outer surface minutely warty; stamens much shorter than petals, basally fused to petals; filaments very short; anthers c. 0.2 mm long, cream; fruiting pedicel 2.5–5 mm long, c. 2 mm wide. Fruit globose but with a basal constriction, 35–43 mm diam., orange-red with stigmatic remains present apically; epicarp with scattered lenticellular dots, glossy with a longitudinal stripe of suberised epidermal tissue usually visible for the full length of the fruit; mesocarp 13–15 mm thick, softly fibrous, mealy, orange; endocarp to 2 mm thick, bony. Seed globose, 22–28 mm diam.; endosperm deeply intruded by the seedcoat; intrusion kidney shaped with an orange pulpy tissue; embryo lateral. Fig. 3.

Specimens examined: Papua New Guinea. WEST SEPIK PROVINCE: Onake Mts, Apol area, on road to Niau Kono from Vanimo, 02°45.89'S, 141°04.06'E, 500 m alt., Feb 1998, Dowe 516 with Ferrero (JCT, LAE); Onake Mts, Niau, 2°46.276'S, 141°03.611'E, 425 m alt., Mar 2000, Barfod 510 with Banka & Kjaer (AAU, BRI, JCT, K, LAE).

Distribution and habitat: Papua New Guinea: West Sepik Province, Onake Mts, 400–600 m alt., in rainforest on ridges of limestone and metamorphic rocks.

Phenology: Flowering November to January; fruiting March to June.

Etymology: From the native Bewani language vernacular *tothur*, pronounced 'tot-her', and used in the Niau area for this plant.

Ethnobotany: Bows and roof struts are fashioned from the petioles, umbrellas are made from the leaves and salt is extracted from the ash of burned petioles.

Notes: *Livistona tothur* is distinguished by the silver glaucous bloom on the abaxial surface of its leaf lamina, the leaf segments with rigid apices, the presence of a bract at the base of each axis of the inflorescence and papery and glabrous bracts on the inflorescence rachis, glabrous or moderately pubescent inflorescence axes, and orange-red fruit to 43 mm diameter.

Acknowledgments

We thank the PNG Forest Research Institute for permission to use the drying facilities in the Lae Herbarium. We appreciate our interaction with Roy Banka, curator of the living collections in the Lae Botanic Garden, who joined us in field studies in 1999 and 2000. Field-work was funded by the Danish Natural Science Research Council (Grant 9600861) and the Carlsburg Foundation (Grant 980298/10 – 1150). This paper was written during Anders S. Barfod's sabbatical leave in 1999–2000 while based at the Queensland Herbarium. We are grateful to Gordon Guymmer, Director of the Queensland Herbarium, for making this possible. A special thanks goes to Lucy T. Smith who skilfully rendered the line drawings.

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